

# FMT Load Washer Cell



- High Temperature on Request
- Washer load cell
- Range 20 to 320 kN [4 to 64 klbf]
- Ranges compatible with screw dimensions
- High stiffness

## DESCRIPTION

Measurement Specialties, Inc.'s washer load cell, model **FMT**, is designed to measure clamping and screwing forces. The sensor design reduces the hysteresis and sensitivity variations associated with torque generated by friction during tightening. The **FMT** has a high stiffness and can be used in static and dynamic applications.

With many years of experience as a designer and manufacturer of sensors, Measurement Specialties, Inc. often works with customers to design or customize sensors for specific uses and testing environments.

To meet your needs we also offer complete turnkey systems. The matched components (sensor, power, amplifier and digital display) are formatted, calibrated and ready for immediate use.

## FEATURES

- Screw dimensions
- Compression
- For Static and Dynamic Applications
- Support Washer Provided

## APPLICATIONS

- Monitoring Bolt Clamping for Bridges
- Process Control Equipment
- Robotics and Effectors
- Laboratory and Research

## STANDARD RANGES

Model	FMT6	FMT8	FMT10	FMT12	FMT14	FMT16	FMT18	FMT20	FMT22	FMT24
Ranges in N	20k	35k	55k	80k	110k	140k	180k	220k	270k	320k
Ranges in lbf	4k	7k	11k	16k	22k	28k	36k	44k	54k	64k

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## PERFORMANCE SPECIFICATIONS

All values are typical at temperature 20 ±1°C

PARAMETERS	
Operating Temperature Range (OTR)	-20 to 80°C [-4 to 176°F]
Compensated Temperature Range (CTR)	0 to 60°C [32 to 140°F]
Zero Shift in CTR	<0.5% F.S. / 50°C [/100°F]
Sensitivity Shift in CTR	<1% of reading / 50°C [/100°F]
Range (F.S.)	0-20 to 320 kN [4 to 64 klbf]
Over-Range	
Without Damage	1.5 x F.S.
Without Destruction	3 x F.S.
Accuracy	
Combined Non-Linearity & Hysteresis	From 1-5% F.S.

### Electrical Characteristics

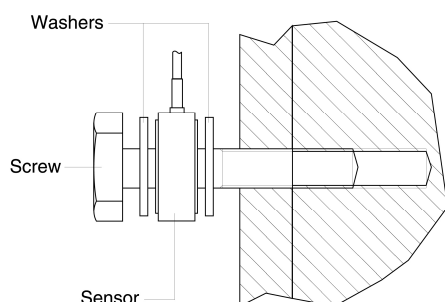
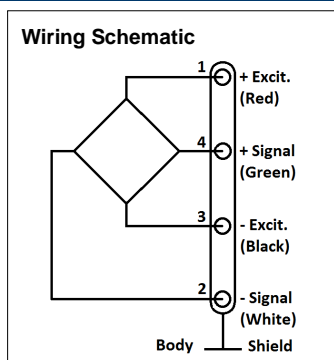
Model	FMT
Supply Voltage	10Vdc
F.S. Output	1.5mV/V
Zero Offset	±5% F.S.
Input Impedance	700Ω
Output Impedance	700Ω
Insulation under 50Vdc	≥100MΩ

### Notes

1. Electrical Termination: Shielded cable, standard length 2 m [6.5 ft] with strain relief spring
2. Materials: Body in stainless steel, cover in aluminium alloy
3. Support Washer: Steel
4. CE conformance according to EN 61010-1, EN 50081-1, EN 50082-1

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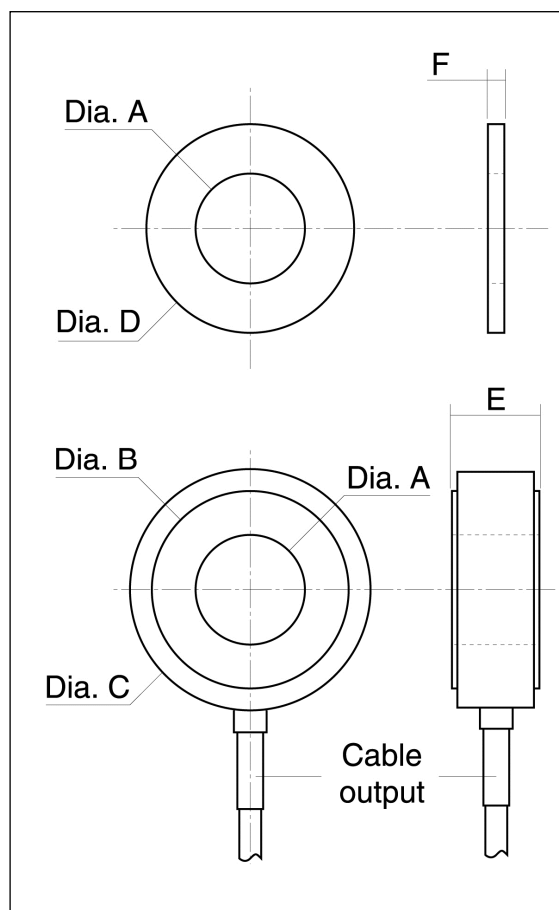
## DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



### Safe practice:

Due to the FMT's small size and stiffness, a certain number of mounting precautions should be observed during installation:

- The force should be uniformly distributed over the surface of the sensor.
- Surfaces in contact with the sensor should be uniform and parallel.
- We recommend that washers (supplied by MEAS) be mounted between the surfaces and the sensor so that the washers are crushed during tightening. This helps to distribute the force more evenly. Linearity response is function of this caution.



### Dimensions in mm [inch]

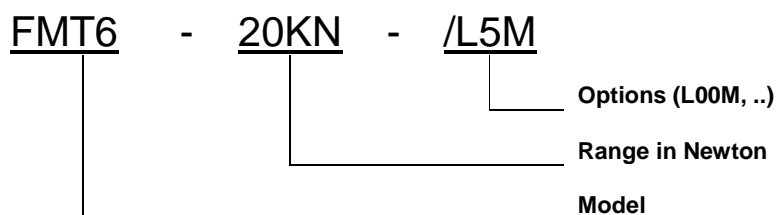
Model	FMT6	FMT8	FMT10	FMT12	FMT14	FMT16	FMT18	FMT20	FMT22	FMT24
Ranges in N [in lbf]	20k [4k]	35k [7k]	55k [11k]	80k [16k]	110k [22k]	140k [28k]	180k [36k]	220k [44k]	270k [54k]	320k [64k]
A	6.1 [0.24]	8.1 [0.32]	10.1 [0.40]	12.1 [0.48]	14.1 [0.56]	16.1 [0.63]	18.1 [0.71]	20.1 [0.79]	22.1 [0.87]	24.1 [0.95]
B	11 [0.43]	14.5 [0.57]	18 [0.71]	22 [0.87]	25.5 [1.00]	29 [1.14]	32.5 [1.28]	36 [1.42]	40 [1.57]	43.5 [1.71]
C	18 [0.71]	21 [0.83]	25 [0.98]	29 [1.14]	32 [1.26]	36 [1.42]	39 [1.54]	43 [1.69]	48 [1.89]	50 [1.97]
D	12.7 [0.50]	19 [0.75]	22 [0.87]	25 [0.98]	28 [1.10]	32 [1.26]	34 [1.34]	38 [1.50]	44 [1.73]	48 [1.89]
E	6.5 [0.26]	10 [0.39]	11 [0.43]	11.5 [0.45]	12.5 [0.49]	13.5 [0.53]	15 [0.59]	16 [0.63]	17 [0.67]	19 [0.75]
F	1.5 [0.06]	1.5 [0.06]	2 [0.08]	2 [0.08]	2 [0.08]	3.2 [0.13]	3.2 [0.13]	3.2 [0.13]	3.2 [0.13]	3.2 [0.13]

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## OPTIONS

**L00M** : special cable length, replace "00" with total length in meters.

## ORDERING INFO



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